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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/744,205	01/18/2001	Wayne G. Sainty	HAC-026	4028

7590

02/28/2003

David P Gordon
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EXAMINER

ANDERSON, BRUCE C

ART UNIT

PAPER NUMBER

2881

DATE MAILED: 02/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/744,205

Applicant(s)

SAINTY, WAYNE G.

Examiner

BRUCE C ANDERSON

Art Unit

2881

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaufman (032) or Yoshikawa (222) or Alexander (364) in view of GB 2,295,268.

Kaufman (032) discloses the basic combination of an annular anode (24); gas inlet means adjacent said anode; a cathode (22); means for impressing a potential difference between said anode /cathode; an ionization region within or adjacent said anode (col.7, second paragraph); and magnetic means for providing a magnetic field parallel to the electric field created between said anode/cathode. Here the electric field between said anode/cathode would direct electrons to flow in the direction from the cathode to the anode (col.2, lines 47-54). Ions of course would flow in the opposite direction toward said cathode.

Yoshikawa (222) discloses a similar Hall accelerator comprising: a main discharge area having an anode means; annular anode means (concentric cylindrical electrodes); a cathode opposite to said anode; a magnetic means to produce a magnetic field in a longitudinal axial direction of the concentric electrodes; and a means to force cooling of said anode means (see claim 1).

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Alexander (364) discloses an annular ionization zone 103^A, having an anode 103, an annular magnet 102, and a cathode 120 (col.3, second paragraph). In this particular circumstance the ion source was used in conjunction with a coaxial mass spectrometer surface 145.

Thus the above references disclose the basic combination of an anode/cathode situated opposite each other, wherein said anode may be annular in shape, and a magnetic means can be utilized to produce a longitudinal magnetic field, that is parallel to the electric field between said anode/cathode. Also, as taught by Yoshikawa (222), the anode means may further be cooled by a cooling means.

Although none of the above references disclose the use of a coating layer (titanium nitride) over exposed surface areas in the ionization region, it is thought that this would have been obvious modification to one of ordinary skill in the art, since such is known in the prior art of ion generation, as is broadly taught by the secondary reference to GB 2,295,268. Usually such a coating is applied to reduce the wearing away of inside, exposed surface. Hence such a coating could have been applied without deviation to the overall operation of such devices, if so desired.

Drawings

3. This application has been filed with informal drawings which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.


Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Greenly has been cited to show another similar device

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BRUCE C ANDERSON whose telephone number is 703-308-4851. The examiner can normally be reached on MON.-FRI. 6:15AM-3:45PM (off ALT. FRI.).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, JOHN LEE can be reached on 703-308-4116. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7721 for regular communications and 703-308-2864 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.


BRUCE C ANDERSON
Primary Examiner
Art Unit 2881

BCA
March 12, 2002.